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THE PARKING AUTHORITY'S

SAN FRANCISCO PARKING PROGRAM

for the

City and County of San Francisco

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The Parking Authority's  
SAN FRANCISCO PARKING PROGRAM

for  
The City and County of San Francisco

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TO: The Honorable Elmer E. Robinson, Mayor  
and  
The Honorable Board of Supervisors of  
the City and County of San Francisco

Gentlemen:

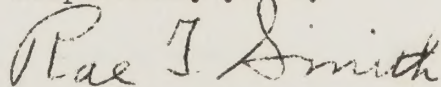
The attached report is respectfully submitted for your information and consideration. It is recommended as a guide for legislative action necessary to implement the proposed parking program.

It is believed that this program can go forward without delays or large expenditures for further engineering studies, except those incident to the development of each project, or that might be required for revenue bond financing if that method should be selected.

As you know, the release of this new parking program for the City and County of San Francisco has been delayed due to pending litigation in the State Supreme Court. However, the urgent necessity for immediate action, and assurance of public support, now emphasized in the report of the San Francisco Parking and Transit Council embodying the views of principal business and civic organizations, has convinced the Authority that the basic program should be begun at once.

May I, on behalf of the Members of the Authority, express our sincere appreciation for the splendid cooperation received from the various boards, commissions, and city officials whose assistance and counsel have been helpful in the preparation of this report.

Respectfully yours,



Rae T. Smith, Chairman  
The Parking Authority of the  
City and County of San Francisco



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Map of Parking Projects in  
The San Francisco Parking Program



## A SAN FRANCISCO PARKING PROGRAM

### INTRODUCTION

This report presents an analysis of the present off-street parking problems in the City of San Francisco and the Parking Authority's plan and program for the solution thereof. It is based on various studies, reports and recommendations already submitted to it by outside interested parties, on engineering studies conducted on the Authority's behalf by the City Engineer, and on the Parking Authority's own surveys and compilation of statistics. Among those reports and recommendations studied and digested are the following:

1. Report of Technical Committee of the Mayor's Administrative Transportation Planning Council (1947).
2. Transportation Plan for San Francisco, by De Leuw Cather & Co. and Ladislas Segoe and Associates (1948).
3. Report to Parking Authority of San Francisco on Proposed Public Garage in the Central Market Street Area, by the City Engineer (1951).
4. Report to Parking Authority of San Francisco on A Downtown Parking Program, by the City Engineer (1954).
5. MacPhee Plan for a Minna-Natoma Garage.
6. MacPhee Plan for Kearny Street Garages.

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7. George S. Hill Plan for a Minna-Natoma Parking Plaza.
8. Louis R. Lurie Plan for Downtown Garages.
9. R. S. Chew Transit and Parking Plan.
10. Plan of the Traffic Engineering Bureau of the San Francisco Police Department for South of Market Garage.
11. Morris Edelman Plan for Parking on Produce Market Site.
12. Coro Foundation Fringe Parking Report - Eric Mohr (1950).
13. Woodruff-Sampson Report (1946).
14. Various other suggestions submitted by interested parties.

#### POLICY AND PROGRAM TO DATE

Shortly after its inception, the Authority adopted a declaration of policy and program in part as follows:

"The program of the Authority contemplates the following steps:

1. Stimulation of private enterprise to finance and construct the facilities required under the off-street parking program. In the event results are inadequate, the Authority will proceed to the next step; namely,
2. Cooperation with private enterprise in securing sites for garage construction. Such garage sites, purchased by the Authority through

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$$E_{\text{eff}} = \frac{1}{2} \left( \frac{1}{\epsilon_0} + \frac{1}{\epsilon_0} \right) = \frac{1}{\epsilon_0}$$

... ..

negotiation or by process of condemnation, will be made available on mutually agreeable terms to private parties for construction and operation of garages thereon. Again, if results are inadequate, the next step will be taken; namely,

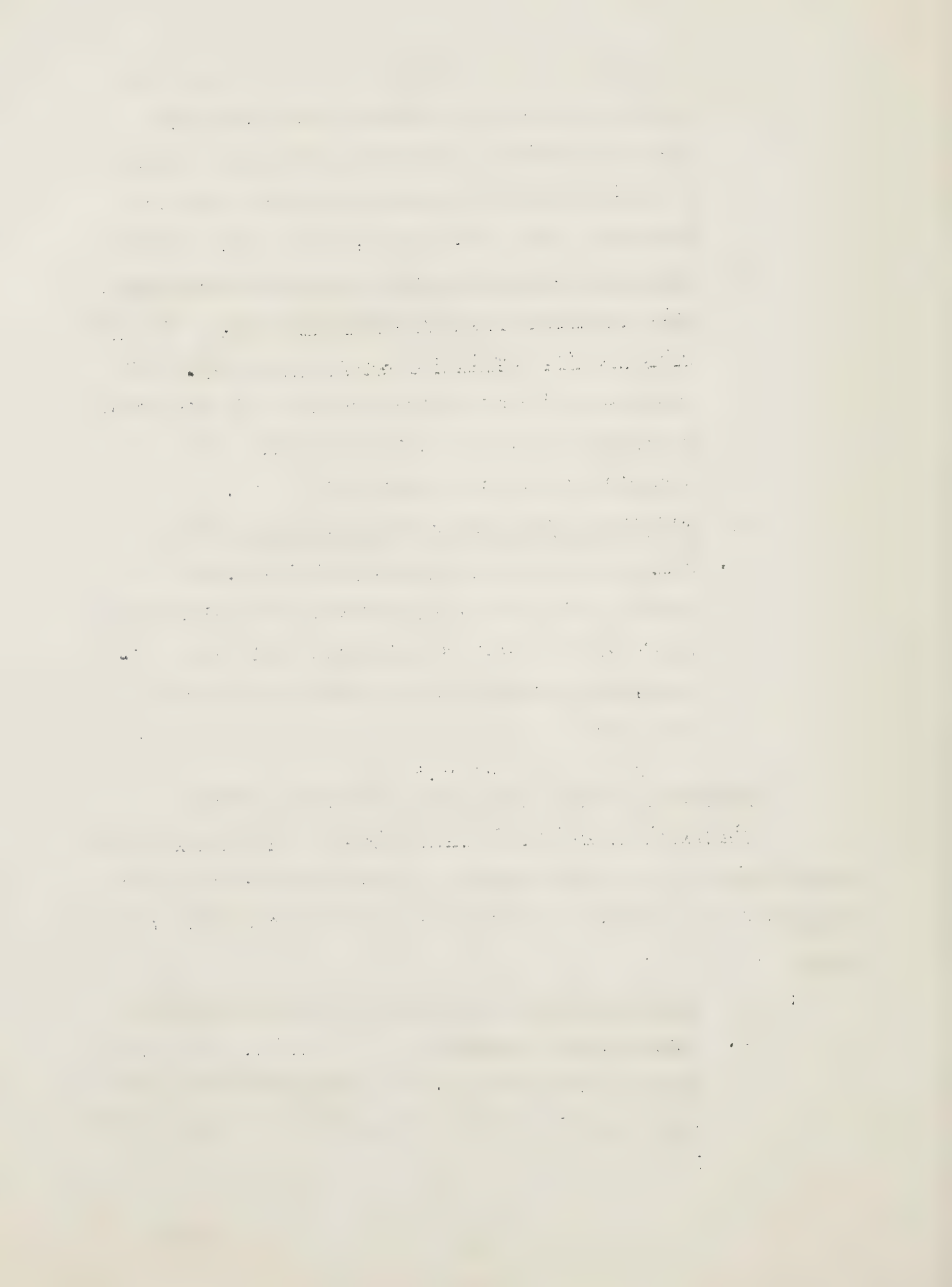
3. Financing and construction of garages, including site acquisition by the Authority itself. Private parties will then be invited to submit bids for operation of the completed project. In the event satisfactory bids are not forthcoming, the Authority will have recourse to,
4. Operation of the completed facilities. The Authority wishes to emphasize that it will exercise its powers of financing, site acquisition, construction and operation only as a necessary supplement to the ability of private enterprise to perform."

#### PROGRESS TO DATE UNDER ABOVE POLICY AND PROGRAM

The first phase of the San Francisco Off-Street Parking Program shows the following results to date under the several categories of procedure set forth in the above declaration of policy:

1. The stimulation of private enterprise to finance, construct and operate.

That the activities of the Parking Authority have had a direct effect in this category seems apparent



from the following comparison:

Permits for new public garage construction issued in the 20 years before the Authority became active, or from 1930 to 1950, show that only 10 were for new garages downtown, capacity 3,366 spaces. Of these, Union Square Garage and Bridge Terminal Garage alone account for 2,327 stalls. Union Square Garage is a public-private enterprise and Bridge Terminal Garage was built by the State. Thus, only 1,039 new car spaces were provided by private industry in downtown San Francisco over the 20 years preceding the Parking Authority. This was an average of only about 52 new car spaces per year. For the years from 1942 to 1950, no permits for new downtown garages had been issued except for one garage of 53 stalls.

This picture has changed materially since establishment of the Parking Authority and it is believed that its spotlighting of the parking problem, and concurrent activities, have led to the greater private activity indicated below.

During only the past  $4\frac{1}{2}$  years, since the establishment of the Parking Authority, a total of



3,950 new parking spaces have been constructed, are being constructed, or are about to be constructed by private enterprise at an estimated cost of in excess of \$9 million of private capital and no expenditure of city funds. Of these there have been 1,835 new parking spaces constructed and placed in operation, of which the 500-stall Lick Place Garage is the major example. There are also 2,115 more parking spaces being developed at the present time -- specifically 1,150 in the Mason-O'Farrell Garage where the land is already cleared and construction begun; 450 in the Montgomery Block Garage, 115 in the North Beach-Broadway area, and 400 in the Temple Garage on Nob Hill, in which cases plans are already in the blueprint stage.

2. Cooperation between the Parking Authority, the City and private enterprise in the development of new parking facilities.

Under this second category, three projects totaling 2,028 parking spaces are of record.

These are:

- |    |  |            |
|----|--|------------|
| a) | St. Mary's Square Garage                         | 828 stalls |
| b) | Civic Center Parking Lot<br>(Commerce Playfield) | 300 stalls |
| c) | Ellis-O'Farrell Garage                           | 900 stalls |

1. The first part of the paper is devoted to the study of the

properties of the function  $f(x)$  defined by the equation

$f(x) = \int_0^x f(t) dt$  for  $x \in [0, 1]$ . It is shown that

$f(x)$  is a continuous function on  $[0, 1]$  and that

$f(0) = 0$  and  $f(1) = 1$ . The function  $f(x)$  is

strictly increasing on  $[0, 1]$  and its derivative is

$f'(x) = f(x)$  for  $x \in (0, 1)$ . The function  $f(x)$  is

concave down on  $[0, 1]$  and its second derivative is

$f''(x) = f(x)$  for  $x \in (0, 1)$ . The function  $f(x)$  is

convex up on  $[0, 1]$  and its third derivative is

$f'''(x) = f(x)$  for  $x \in (0, 1)$ . The function  $f(x)$  is

concave down on  $[0, 1]$  and its fourth derivative is

$f^{(4)}(x) = f(x)$  for  $x \in (0, 1)$ . The function  $f(x)$  is

convex up on  $[0, 1]$  and its fifth derivative is

$f^{(5)}(x) = f(x)$  for  $x \in (0, 1)$ . The function  $f(x)$  is

strictly increasing on  $[0, 1]$ .

2. The second part of the paper is devoted to the study of the

properties of the function  $g(x)$  defined by the equation

$$g(x) = \int_0^x g(t) dt$$

for  $x \in [0, 1]$ . It is shown that  $g(x)$  is a continuous function on  $[0, 1]$  and that

$g(0) = 0$  and  $g(1) = 1$ . The function  $g(x)$  is

strictly increasing on  $[0, 1]$ .

3. The third part of the paper is devoted to the study of the

properties of the function  $h(x)$  defined by the equation

$$h(x) = \int_0^x h(t) dt$$

for  $x \in [0, 1]$ . It is shown that  $h(x)$  is a continuous function on  $[0, 1]$  and that

St. Mary's Square Garage is completed and is now in operation.

Civic Center Parking Lot is completed and is now in operation.

Ellis-O'Farrell Garage. The site for this project was approved by the Board of Supervisors on March 23, 1953. With the conclusion of the court test that was found necessary to determine the constitutionality of the proposed procedures, the Authority will be in a position to proceed. The case is now before the State Supreme Court; argument is set for September 16, 1954.

Thus, under phase two, 1,128 of the 2,028 parking spaces are now in operation and construction of the remaining 900 will be undertaken when the Supreme Court gives its approval.

3. Public financing and construction.

Under this category of the program, five projects totalling 1,156 parking spaces are of record. One project has been completed and four others that had been officially designated by the Authority are in process of development at this time. The projects under this category are:

- |    |  |            |
|----|--|------------|
| a) | Mission-Bartlett Parking Plaza<br>Opened for business July, 1953 | 250 stalls |
| b) | Minna-Natoma Parking Lot<br>Designated                           | 500 stalls |
| c) | Fifth and Howard Parking Lot<br>Designated                       | 300 stalls |



- d) Lakeside Village Parking Lots      49 stalls  
Designated
- e) North Beach-Broadway Parking      57 stalls  
Lot - Designated

It should be noted in reference to Project (e) that certain private interests have undertaken construction of a garage of 115 stalls, thereby eliminating the necessity of public construction of this facility. Inasmuch as the provision of this new parking facility by private enterprise is in conformity with and has preference under the Authority's declaration of policy, the Authority has cancelled its own plans for this project.

#### 4. Operation of completed facilities.

To date action under this category has not become necessary.

#### SUMMATION:

To sum up, in the four and one-half years since the Authority was established, San Francisco has gained and is now using 3,213 new parking spaces and has under actual development by private enterprise at the present 2,115 more plus an additional 1,749 stalls already designated by the Authority, or a grand total of 7,077 new parking spaces. Of this total, approximately 96% are located in downtown San Francisco.

<u>Classification</u>	<u>New Stalls in Use</u>	<u>New Stalls in Development</u>	<u>Total</u>
I (Private financing)	1,835	2,115	3,950
II (Public-private financing)	1,128	900	2,028
III (Public financing)	<u>250</u>	<u>849</u>	<u>1,099</u>
	3,213	3,864	7,077

1. The first part of the paper is devoted to a general discussion of the problem.

2. The second part is devoted to a detailed analysis of the case of a single particle.

3. The third part is devoted to a detailed analysis of the case of a system of particles.

4. The fourth part is devoted to a detailed analysis of the case of a system of particles.

5. The fifth part is devoted to a detailed analysis of the case of a system of particles.

6. The sixth part is devoted to a detailed analysis of the case of a system of particles.

7. The seventh part is devoted to a detailed analysis of the case of a system of particles.

8. The eighth part is devoted to a detailed analysis of the case of a system of particles.

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13. The thirteenth part is devoted to a detailed analysis of the case of a system of particles.

14. The fourteenth part is devoted to a detailed analysis of the case of a system of particles.

15. The fifteenth part is devoted to a detailed analysis of the case of a system of particles.

16. The sixteenth part is devoted to a detailed analysis of the case of a system of particles.

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22. The twenty-second part is devoted to a detailed analysis of the case of a system of particles.

23. The twenty-third part is devoted to a detailed analysis of the case of a system of particles.

24. The twenty-fourth part is devoted to a detailed analysis of the case of a system of particles.

25. The twenty-fifth part is devoted to a detailed analysis of the case of a system of particles.

26. The twenty-sixth part is devoted to a detailed analysis of the case of a system of particles.

27. The twenty-seventh part is devoted to a detailed analysis of the case of a system of particles.

28. The twenty-eighth part is devoted to a detailed analysis of the case of a system of particles.

The actual and projected total cost of this program is \$17,436,650, of which only \$4,588,650 is public money, or roughly about 25% of the total.

#### BASIC POLICY AND THE DOWNTOWN AREA

The downtown area has always been recognized by the Parking Authority as the area of San Francisco in which the most critical parking problem now exists. However, inasmuch as the Parking Authority functions in the interests of the City as a whole, it has always been receptive to individual problems in outlying districts that have been brought to its attention by interested groups from time to time. Action befitting the necessity of those problems has been taken where justified and consideration will always be given to such outlying problems as may be presented to the Authority.

In the development of the new parking program, the Parking Authority has given careful consideration to the idea of fringe parking. In this connection, fringe parking is taken to be that type of parking utilized in conjunction with a trip which originates by automobile, involves the intermediate parking of the automobile at the perimeter of the business district, and completion of the trip by transit.

Although it is recognized that some forms of fringe parking may have been operated with some success in more widely spread cities, it is not believed that these examples could be followed with equal success in a city as compact as San Francisco.

Some reasons for this are:

- 1) San Francisco's unusually short, metropolitan



distances between home and business induce through trips by either automobile or transit, rather than the split trips consisting of part automobile, part transit which characterize fringe parking use.

- 2) Comparatively high land values in a city as congested as San Francisco make it relatively impossible to secure parking sites even if suitable locations could be found at prices low enough to permit the extremely moderate parking charges, or the free parking, commonly associated with fringe parking that has operated with any degree of success elsewhere.
- 3) That it is doubtful whether San Francisco even has a perimeter area to be used for fringe parking as questioned by Mayor Elmer E. Robinson when speaking before the Authority at its Special Meeting of October 27, 1953.

As a matter of fact, San Francisco's experiments with fringe parking have invariably ended in failure. Such examples as those ranging from free parking at Valencia and Market Streets offered by the old Market Street Railway in the 1930's, through that of Macy's free Christmas bus special in 1947, to the recent ones at Columbia Square, near Third and Townsend, and beneath new sections of the Bayshore Freeway during the Key System strike of 1953 are cases in point. Recent checks at the Civic Center Parking Lot in old Commerce Playfield, served by the downtown



5¢ shoppers' special bus, showing that only about one passenger per trip originates at the parking lot, is up-to-date confirmation of the unwillingness of San Franciscans to utilize fringe parking to any practical extent.

For these reasons, the Authority does not feel that fringe parking provides a practical solution to the downtown parking problem under present conditions.

In this report the downtown business district is taken to be the area occupied by the principal department and specialty stores, professional offices, financial institutions, insurance and business offices, government offices, hotels, theatres and restaurants. For the purpose of more specific analysis and detailed treatment, the following have been designated as areas to be studied individually representing the central core of greatest congestion and highest parking need:

- A. Triangle Shopping District, bounded by a line beginning at the corner of Bush and Taylor Streets, thence east on Bush to a point midway between Kearny and Montgomery Streets, thence south to Post, thence southwest parallel to Market Street to Taylor, thence north on Taylor Street to the point of origin.
- B. Financial District, bounded by a line beginning at the corner of Grant Avenue at Sacramento Street, thence east to a point midway between Drumm Street and The Embarcadero, thence southwest parallel to Market Street to a point midway between Montgomery and Kearny Streets, thence north to Bush Street, thence west to Grant Avenue, thence north to the point of origin.

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- C. Central Market Street District, bounded by a line beginning at a point just north of Market Street midway between Larkin and Hyde Streets, thence northeast parallel to Market to a point midway between Grant Avenue and Kearny Street, thence south to Market, thence southeast to Howard Street, thence southwest to a point midway between Eighth and Ninth Streets, thence northwest to the point of origin.
- D. Lower Market Street District, bounded by a line beginning at a point just north of Market Street between Grant Avenue and Kearny Street, thence northeast parallel to Market to Sacramento Street, thence southeast to Howard, thence southwest to a point midway between Third and Fourth Streets, thence northwest to Market Street, thence northeast to the point of origin.

The areas are shown on the attached map.



## ANALYSIS OF DEMAND AND SUPPLY

The demand for parking is largely created by two fairly well defined classes of parker whose needs must be given particular consideration.

The Short-Term Parker is the customer of department and specialty stores, and is also the client of doctors, lawyers and financial advisors, the salesman or executive making business calls, and the patron of service shops, restaurants and theatres. He wants a parking space for 1 to 3 hours within about 800 or 1,000 feet of his destination and will pay a moderate fee for its use. If such facility is not available, he is likely to go to other parts of the City where his needs can be met and parking facilities are available.

It should be noted that, as the City Engineer emphasized in his February, 1954 parking report, provision of new facilities for short-term parkers within the downtown business district will tend to have the beneficial effect of relieving mid-day traffic congestion.

The Long-Term Parker works downtown and wants to drive his automobile to and from his job rather than use a streetcar or bus. He needs a parking space for 8 to 10 hours and will pay a fee within his means, the amount depending in part on the distance from his destination. He enters and leaves the downtown district with large numbers of his fellow workers and is almost wholly responsible for the morning and evening traffic congestion periods.



In order to relieve the excessive morning and evening congestion on the streets, the long-term parker should be diverted to facilities slightly outside the central downtown district. Therefore, consideration for the needs of the long-term parker is being given only in those areas outside the point of greatest present traffic congestion.

Although it is recognized that both workers and customers are entitled to parking consideration, the Authority feels that the long-term parking need may be met by:

1. Use of existing all-day facilities located just outside the central core area.
2. Conversion of existing short-term space located just outside the central core area to long-term parking space as additional short-term space at lower rates is made available within the central core area.
3. Private enterprise providing additional long-term parking immediately adjacent to the central core area.

#### CURB PARKING ENFORCEMENT

The Parking Authority's basic function is the reduction of street traffic congestion by the provision of additional new off-street parking. There are other factors pertaining to traffic control which are not strictly within the Authority's province but with which its program is so closely inter-related that they deserve comment. One such important factor is the matter of curb parking in congested areas.



The Authority believes the practice of curb "meter feeding" on the part of those who wish long-term parking space should be discouraged by all available means. The resultant availability of this space for the short-term parker will do much to relieve the short-term parking demand while new off-street short-term parking is under construction. Acceptance of this viewpoint by the press, the courts and the public will do much to assist the police in the enforcement of curb parking regulations.

#### CURB PARKING ELIMINATION

Inasmuch as the Authority's primary objective is relief of traffic congestion, it believes that the eventual elimination of curb parking in the central business district as soon as equivalent off-street parking space is provided will have highly beneficial effects on vehicular movement and transit operation without any appreciable adverse effect on business. (See Appendix A)

It would furthermore affect only some 2,000 of San Francisco's 12,000 parking meters with a small loss in total meter revenue.

#### THE FOUR DOWNTOWN AREAS OF GREATEST PARKING DEMAND

The Authority has based its estimates of additional parking need on supply and demand figures compiled by the City Engineer, and parking inventory studies by the San Francisco Chamber of Commerce and the staff of the Parking Authority. Present on-street curb parking spaces have been omitted from the statistics for reasons given in the preceding paragraph.



A. Triangle Shopping District -

1. Short-term parking demand:

- |   |            |
|---|------------|
| a. Total demand 7:00 a.m. - 7:00 p.m. average business day as shown by intersection demand figures of City Engineer's Report February, 1954 and supplements   | 11,060     |
| b. Off-street parking spaces required to satisfy above demand on City Engineer's assumption of 2.5 turn-over for short-term parking (see February, 1954 Report) and with 10% vacancy cushion for operating service and efficiency as recommended by leading parking engineers   | 4,917      |
| c. Existing off-street spaces available for short-term parking on assumption that present usage results in approximately 60% of space used for long-term parking, leaving 40% available for short-term parking. This on the basis of case studies in the De Leuw Report (1948) and inferences drawn from excess demand figures in February, 1954 City Engineer's Report | 2,256      |
| d. New parking spaces needed  | 2,661      |
| e. New short-term parking spaces under construction. (This figure represents 40% of the Mason-O'Farrell Garage 1,150-stall capacity.)   | <u>460</u> |
| f. Additional parking spaces needed to meet present demand. (Future increased demand due to greater use of more automobiles and induced by new parking facilities not considered for action at this time.)  | 2,201      |



A. Triangle Shopping District (Cont'd) -

2. Long-term parking demand:

(Defined as parking for more than 6 hours)

- |  |            |
|--|------------|
| a. Total demand 7:00 a.m. - 7:00 p.m. average business day as shown by intersection demand figures furnished by City Engineer March, 1954  | 7,257      |
| b. Off-street parking spaces required to satisfy above demand on basis of 1.5 turnover and with 10% vacancy cushion for operating service and efficiency as recommended by leading parking engineers. (The De Leuw Report found the average turnover for all classes of off-street parking in the central downtown area to be 1.64.) | 5,380      |
| c. Existing off-street spaces available for long-term parking on assumption that present usage results in approximately 60% of space being used for long-term parking  | 3,385      |
| d. New parking spaces needed   | 1,995      |
| e. New long-term parking spaces under construction. (This figure represents 60% of the Mason-O'Farrell Garage 1,150-stall capacity.)   | <u>690</u> |
| f. Additional parking spaces needed to meet present demand. (Future increased demand not shown.)   | 1,305      |
| 3. Total additional parking spaces needed to meet both short-term and long-term parking demand   | 3,506      |



The explanations given above also apply to the similar sections of the estimates for the following three districts:

B. Financial District -

1. Short-term parking demand:
  - a. Total demand 7:00 a.m. - 7:00 p.m. average business day 3,567
  - b. Off-street parking spaces required to satisfy above demand 1,536
  - c. Existing off-street spaces available 1,907
  - d. New parking spaces needed None
2. Long-term parking demand:
  - a. Total demand 7:00 a.m. - 7:00 p.m. average business day 7,838
  - b. Off-street parking spaces required to satisfy above demand 5,650
  - c. Existing off-street spaces available 2,966
  - d. New parking spaces needed 2,684
3. Total additional parking spaces needed to meet both short-term and long-term parking demand 2,684



C. Central Market Street District -

1. Short-term parking demand:

- |  |              |
|--|--------------|
| a. Total demand 7:00 a.m. -<br>7:00 p.m. average business<br>day     | 14,082       |
| b. Off-street parking spaces<br>required to satisfy above<br>demand  | 6,258        |
| c. Existing off-street spaces<br>available for short-term<br>parking | <u>1,007</u> |
| d. New parking spaces needed to<br>meet present demand               | 5,251        |

2. Long-term parking demand:

- |   |              |
|---|--------------|
| a. Total demand 7:00 a.m. -<br>7:00 p.m. average business<br>day    | 11,002       |
| b. Off-street parking spaces<br>required to satisfy above<br>demand | 8,160        |
| c. Existing off-street spaces<br>available for long-term<br>parking | <u>1,511</u> |
| d. New parking spaces needed to<br>meet present demand              | 6,649        |

- |  |        |
|--|--------|
| 3. Total additional parking spaces needed<br>to meet both short-term and long-term<br>parking demand | 11,900 |
|--|--------|



D. Lower Market Street District -

1. Short-term parking demand:

- a. Total demand 7:00 a.m. -  
7:00 p.m. average business  
day 6,255
- b. Off-street parking spaces  
required to satisfy above  
demand 2,831
- c. Existing off-street spaces  
available for short-term  
parking 1,577
- d. New parking spaces needed to  
meet present demand 1,254

2. Long-term parking demand:

- a. Total demand 7:00 a.m. -  
7:00 p.m. average business  
day 12,707
- b. Off-street parking spaces  
required to satisfy above demand 9,570
- c. Existing off-street spaces  
available for long-term  
parking 2,365
- d. New parking spaces needed to  
meet present demand 7,205

3. Total additional parking spaces needed  
to meet both short-term and long-term  
parking demand

8,459



TOTALS OF NEEDED NEW OFF-STREET PARKING SPACE  
TO MEET PRESENT DEMAND

---

<u>District</u>	<u>Short-Term</u>	<u>Long-Term</u>	<u>Both</u>
A	2,201	1,305	3,506
B	- -	2,684	2,684
C	5,251	6,649	11,900
D	<u>1,254</u>	<u>7,205</u>	<u>8,459</u>
Total	8,706	17,843	26,549

The above calculations are based on the presumption that optimum public service requires a total parking capacity sufficient to provide constant maintenance of about a 10% vacancy cushion in order to assure prompt parking of every automobile as desired. The available supply figures in each instance are for parking spaces within the boundary lines of each district.

Refer to attached map.



### IMMEDIATE PROGRAM

In view of the fact that the extremely pressing vital need is for adequate short-term parking to maintain downtown business patronage and to reduce downtown traffic congestion, the Authority has concluded that its immediate expanded program must be primarily designed to meet the short-term parking need.

### THE PRICE OF PARKING

The question of existing surplus parking space as contended by the San Francisco Garage Owners Association and others appears to have been amply clarified and answered by the supply and demand figures set forth above. Furthermore, as previously explained, the existence of vacancies up to 10% of capacity is not evidence of surplus from the standpoint of public service. Nevertheless, it is entirely possible that some space not in other use at the moment may frequently be available for short-term parking -- but at a price too high for the purpose of encouraging short-term parking. For these reasons, the Parking Authority has come to the conclusion that mere provision of more parking spaces in the downtown area will not solve the problem.

One of the basic reasons for high parking charges is that the great majority of existing parking garages are built so that they must be operated on an attendant basis. We believe that low-cost, shopper parking should be provided, and can be economically provided by private enterprise only in facilities that allow self-parking.



## RECOMMENDED GARAGE LOCATIONS

The Parking Authority is in agreement with the City Engineer that the present need requires the provision of the new parking facilities recommended for immediate action in his February, 1954 report on "A Downtown Parking Program." It should be noted that three of those had been previously designated by the Authority but their development was held up by the recent Mandamus Action between the City and the Controller. The Authority's new off-street parking program is as follows:

### A. Triangle Shopping District --

Present need for additional short-term parking	2,201 stalls
--	--------------

Recommend construction of:	2,220 stalls
----------------------------	--------------

#### Recommended Projects:

1. Ellis-O'Farrell Garage 820 stalls

The location is between Ellis Street and O'Farrell Street, midblock between Powell Street and Stockton Street. It is within the area of high parking demand and close to many retail stores. It is proposed to be primarily for the accommodation of short-term parkers.

This is a project previously adopted by the Authority and designated by the City. It is contemplated that it will have seven parking levels above and below



ground with a total floor space of 264,000 square feet. It is proposed to construct stores on both street frontages using 18,000 square feet for the purpose.

As originally proposed, this project called for 900 parking stalls. It has been reduced to 820 here, however, because that was the recommendation arrived at by the City Engineer for reasons of his own and was used by him as part of the basis for all the revenue estimates and computations which the Authority has adopted for use in this report as further explained on Page 33. Actually, the final plans for the garage may provide for 900 or even more parking stalls.

2. Sutter-Stockton Garage 1,400 stalls

This garage will be located in the westerly two-thirds of the block bounded by Sutter, Stockton, and Bush Streets. The ground area is 74,290 square feet, and the building a total estimated 445,746 square feet of which 24,750 square feet has been



proposed for retail stores. The parking area will accommodate 1,400 parking stalls. This facility is primarily intended to serve short-term parkers.

No provision is being made for long-term parking in this area for two reasons:

- a. It will add to traffic congestion at peak hours.
- b. It is felt that long-term parkers can be accommodated in adjacent areas.

B. Financial District -

Present need for additional short-term parking	-- stalls
Present need for additional long-term parking	2,684 stalls
Recommend construction of	None at present time

No consideration of long-term parking facilities is being given at the present time due to the contemplated construction by private interests of several garages adjacent to this area. It is also felt that the traffic and capacity patterns of St. Mary's Square Garage should be studied to determine what locations can best be selected for future development.



C. Central Market Street District -

Present need for additional  
short-term parking 5,251 stalls

Present need for additional  
long-term parking 6,649 stalls

Recommend construction of 2,585 stalls

Recommended Projects:

1. Fifth and Mission Garage 830 stalls

This project proposes the construction of a garage at the southeast corner of Fifth and Mission Streets running southerly to Minna Street.

The land area is 35,840 square feet.

The garage will provide 830 stalls without any provision for stores.

It is proposed that it be operated on a self-parking basis primarily for short-term parkers.

2. Fifth and Howard Parking Lot 300 stalls

This project comprises an area of 75,625 square feet at the northeast corner of Fifth Street and Howard Street. That will permit construction of 300 parking stalls.

It is proposed that it be operated on a self-parking basis primarily for long-term parkers.



3. Minna-Natoma Parking Lot 250 stalls  
(One-half of capacity - balance  
assigned to Lower Market Street  
District)

This project will occupy the area  
150 feet wide between Minna and  
Natoma Streets extending 825 feet  
from Third to Fourth Street. This  
lot also will be primarily intended  
for the use of the long-term parkers.  
The parking lot can be used for  
construction of a garage at a future  
date when the need arises for either  
more long-term parking space or  
additional space for short-term  
parkers. The site area is 123,750  
square feet which will initially  
provide for about 500 parking stalls.

4. Market-Mission Garage 635 stalls  
(One-half of capacity - balance  
assigned to Lower Market Street  
District)

This project is to be located from  
Market Street to Mission Street at  
a point opposite Grant Avenue. It  
is a modification of a proposal made  
in the City Engineer's Report of  
November, 1951. It is now planned in  
a form that will avoid all but minimum



interference with the electric sub-  
station of the Pacific Gas & Electric  
Co. The required land will have a  
frontage of about 280 feet on Stevenson  
Street and 165 feet on Mission Street.  
The total area is 65,000 square feet.

Six parking levels will be provided for  
the portion of the building facing on  
Mission Street and seven parking levels  
on the remainder of the site. The  
total parking area is 411,400 square  
feet and will accommodate 1,270 parking  
stalls.

Patrons will have on-foot access direct  
to Market Street by means of a bridge  
crossing Stevenson Street and an arcade  
through one of the store areas having  
frontage on Market Street opposite  
Grant Avenue.

This project is proposed to be operated  
on a self-parking basis primarily for  
short-term parkers.

5. Jones-Golden Gate Garage 570 stalls

This project is a garage at the  
northwest corner of Jones Street



and Golden Gate Avenue with frontages on the two streets of 206 feet and 137.5 feet respectively. Although the site is one-half block outside the Central Market Street District, it is very close to that area of high parking demand and in one of relatively low land values.

The site area is 28,360 square feet. The garage will have six levels for parking designed to provide about 570 stalls. It is intended to serve both short-term and long-term parkers on a self-parking basis.

It is recognized that our recommendations for this Area C, and Area D to follow, fall far short of the indicated need. It is felt that the Authority should have the opportunity to study and evaluate its proposed program in actual operation before recommending further expansion.

D. Lower Market Street District -

Present need for additional  
short-term parking

1,254 stalls



Present need for additional long-term parking	7,205 stalls
Recommended construction of	885 stalls

Recommended Projects:

- |  |            |
|--|------------|
| 1. Minna-Natoma Parking Lot<br>(One-half of capacity - balance assigned to Central Market Street District) (See detail above.) | 250 stalls |
| 2. Market-Mission Garage<br>(One-half of capacity - balance assigned to Central Market Street District) (See detail above.)    | 635 stalls |

(See attached map for project locations.)

MECHANICAL GARAGES

The Authority has made a study of the possibilities of service and economy inherent in new types of mechanical garage construction and operation. They provide more parking stalls in proportion to land and building areas than the conventional ramp-type garages and operate with a much reduced personnel. There has been expansion in their use in recent years, and at such time as it deems advisable, the Authority may recommend the construction of some type of mechanical garage in San Francisco, but only after they have reached a stage of greater perfection and better performance. In the general program, the substitution of mechanical-type for ramp-type garages may be permitted if circumstances justify.

COST OF CONSTRUCTION AND LAND ACQUISITION

The following estimates of land acquisition and construction costs are those of the City Engineer. They include a 10% allowance for engineering, legal, and incidental expense.



ESTIMATED COST OF RECOMMENDED PARKING PROGRAM

<u>District</u>	<u>Location</u>	<u>Land</u>	<u>Construction</u>	<u>Total</u>	<u>No. of Stalls</u>	<u>Cost per Stall</u>		
						<u>Land</u>	<u>Const.</u>	<u>Total</u>
Triangle Shopping	Ellis-O'Farrell Garage	\$1,750,000	\$1,513,000	\$3,263,000	820	\$2140	\$1840	\$3980
Triangle Shopping	Sutter-Stockton Garage	2,466,000	2,629,000	5,095,000	1400	1760	1880	3640
Central Market St.	5th & Mission Garage	712,000	1,373,000	2,085,000	830	860	1650	2510
Central Market St.	5th & Howard Lot	460,000	35,000	495,000	300	1530	120	1650
Central Market St.	Jones-Golden Gate Garage	465,000	910,000	1,375,000	570	820	1590	2410
Central Market St.) Lower Market St.)	Minna-Natoma Lot	1,200,000	62,000	1,262,000	500	2400	130	2530
Central Market St.) Lower Market St.)	Market-Mission Garage	1,690,000	2,489,000	4,179,000	1270	1330	1960	3290
TOTALS		\$8,743,000	\$9,011,000	\$17,754,000	5690	\$1535	\$1585	\$3120



## QUESTION OF PARKING RATE SCHEDULES

Many of the reports studied have emphasized the importance of controlled rate schedules in the central business zone that will attract short-term parkers and discourage long-term parkers. Low, short-term rates will induce shopper-parkers to accept off-street instead of curb parking and to do so readily without the round-the-block search for curb space which of itself contributes so heavily to congestion. They will consequently be of material assistance in reducing traffic congestion.

High, long-term parking rates in the central business zone will tend to cause long-term parkers to avoid the centrally located facilities in favor of cheaper ones located on the perimeter of the area, and this will leave more central space for parking.

The Parking Authority has been and still is reluctant to put itself or the City into competition with existing private industry. However, it desires to emphasize the importance of low, short-term parking rates designed to induce customer-parking. It is recommended, therefore, that the downtown tenants and property owners (in other words, those most likely to benefit by the availability of low-rate, customer-parking facilities) arrange to provide an initial period of "free parking" or low-rate parking by agreement with operators of these new facilities. Any such validation plan is bound to increase the patronage of garage and parking facilities, and, therefore, we feel it must be cooperative to the extent of



realistic parking rates and validation costs between garage owners and operators and the downtown interests. This has been done by business groups in other sections of our City, as well as by business groups in the downtown sections of other Metropolitan areas. The Parking Authority will lend every possible assistance and cooperate in every possible way with private enterprise to accomplish that objective.

The City Engineer has proposed a rate schedule with low initial parking rates accelerating rapidly to high rates for longer periods designed to attract short-term parking and discourage long-term parking in centrally located short-term parking garages. He has also proposed moderate all-day rates for garages and parking lots on the fringe of the central area intended to serve the long-term parker. These schedules form the basis for the revenue estimates contained in the City Engineer's report and included in this report. They are the basis for the Authority's own calculations and recommendations with the reservation that they may be modified later in some details. These parking rate schedules are set forth below.

<u>Parking Time</u>	<u>Short-Term Parking</u>	<u>Long-Term Parking</u>
$\frac{1}{2}$ hour	\$ .10	\$ .15
1 hour	.20	.15
2 hours	.35	.25
3 hours	.50	.35
4 hours	.75	.50
5 hours	1.25	.65
Over 5 hours	2.00	.75
Evening only	.35	--
All Night	1.00	--



### INCOME AND EXPENSE ESTIMATES

The following estimates of income and expense are those of the City Engineer based on assumption of the establishment of the rate schedules set forth above. They presume a turnover of 2 for the Minna-Natoma and Fifth and Howard Projects and a turnover of 2.5 for all other recommended projects.

	<u>Ellis- O'Farrell Garage</u>	<u>Sutter Stockton Garage</u>	<u>5th and Mission Garage</u>	<u>Market- Mission Garage</u>	<u>Jones- Golden Gate Garage</u>	<u>5th and Howard Lot</u>	<u>Minna Natoma Lot</u>
Annual Income	\$350,500	\$624,100	\$269,100	\$413,200	\$222,100	\$55,100	\$91,800
Annual Operating Expense	\$110,500	\$183,500	\$ 89,900	\$140,700	\$ 84,600	\$33,400	\$38,100
Net Annual Income, be- fore Property Taxes, Interest Charges, and Amortization	\$240,000	\$440,600	\$179,200	\$264,500	\$137,500	\$21,700	\$53,700
Total Gross Annual Income			\$2,025,900				
Total Annual Operating Expense			\$ 688,700				
Net Annual Income			\$1,337,200				

(In case the parking lot rates should be changed later to the long-term schedule, net annual income would be increased to \$1,381,300.)



The Net Annual Income of \$1,337,200 is 7.53% of the total investment of \$17,754,000. It is available for property taxes, interest charges and amortization of the project cost. Property taxes on present assessed property values at current rates would be about \$166,000 per year. (\$8,743,000 divided by 3.3 and multiplied by .0627.)

#### METHODS OF FINANCING

There are various methods whereby the program might be financed. Three possible methods are given below as illustrations:

1. Land purchases financed by City with 2% (assumed) general obligation bonds with no debt retirement. Improvements financed with private capital at 5½% to be paid off in 30 years:

Gross Annual Income	\$2,025,900
Interest on City Bonds \$8,743,000 at 2%	\$174,900
Interest and amortiza- tion on loans \$9,011,000 at 5½%, 30 years	\$620,000
Operation and Maintenance	<u>\$688,700</u>
Total Annual Costs	\$1,483,600
Net Income available for income and other taxes and profit	\$ 522,300



2. Whole program financed by City with  
2% general obligation bonds in amount  
of \$17,754,000:

Gross Annual Income	\$2,025,900
Operation and Maintenance	\$ 688,700
Net amount available for bond service	\$1,337,200

This would pay off the bonds in about 17 years.

3. Whole program financed by revenue bonds.

The Controller has pointed out that this  
would require certification of the City  
Engineer's construction cost, revenue,  
and expense estimates by a firm of  
engineers acceptable to the financial  
concerns that would presumably purchase  
the bonds. Under this method, the follow-  
ing calculations would apply:

Gross Annual Income	\$2,025,900
Operation and Maintenance	\$ 688,700
Net amount available for bond service (debt service coverage)	\$1,337,200
Annual amount required to amortize \$17,754,000 revenue bonds over 30-year period at $3\frac{1}{2}\%$ interest rate (debt service cost)	\$ <u>912,851</u>
Annual balance after bond service	\$ 424,349

One fairly common method of providing additional



security for parking revenue bonds is the assignment of part or all of the revenue from a city's parking meters for the purpose. The following examples are illustrative of this practice:

Pittsburgh, Pennsylvania - A \$6,000,000 Parking Revenue Bond Issue was supported by estimates of garage revenue plus pledge of two-thirds of estimated parking meter revenues.

Chicago, Illinois - A \$22,600,000 Parking Facility Revenue Bond Issue was supported by estimated parking facility and revenues plus pledge of 70% of city's parking meter revenues.

Ann Arbor, Michigan - Provides that all parking meter revenue shall be pledged in a fund supporting parking revenue bonds.

Sacramento, California - Has issued \$1,950,000 parking revenue bonds supported by revenues, and by pledge of \$50,000 of parking meter revenues.

Fresno, California - Issued \$450,000 parking revenue bonds supported by revenues plus a pledge of 50% of net parking meter revenues or \$55,000.

Vallejo, California - Issued \$300,000 parking revenue bonds supported by revenues plus a pledge of all net parking meter revenues.

The Parking Authority recommends that the adoption of the practice of allocating parking meter revenues for off-street parking in San Francisco be given full consideration by the proper authorities.

The gradual elimination of congested area curb parking could be accomplished without affecting the security of the bond issue, inasmuch as previously pointed out, only a small part of San Francisco's 12,000 parking meters would be involved.



The figures shown above give consideration to recommendations that have been made that taxes be waived in order to so reduce capital costs that low rates may be financially possible. If it is found necessary that the program bear the cost of tax reimbursement, the sum of \$166,000 a year must be added for that purpose to all above expense figures and the net income figures reduced by that amount.

In this connection, it should be noted that, although considerable attention is devoted to the question of potential operating revenues in this report as the sound basis for financing the program, probably its greatest financial benefit will be the maintenance and increase of business, property and tax values resulting from provision of adequate parking accommodations. This point is well emphasized by reference to the Union Square Garage example. The Assessor of the City and County of San Francisco has advised as follows: "The construction of the Union Square Garage certainly had an influence in the enhancement of property value in the area surrounding this important facility. Since 1942 there has been an average increase in the value of land in this neighborhood approximating 47% with a substantial part of said increase due to the garage." It is interesting to note that a rough estimate of the resultant increased tax income is that it amounts to about \$1,500,000 a year. Since that was approximately the cost of building the garage, the City is actually receiving the equivalent of the facility's cost in additional tax money every year.



It is thus quite apparent that proper location of garage facilities is paramount; and that direct in-lieu tax payments might well be waived, inasmuch as the indirect tax benefits from the resulting higher valuation of surrounding properties may be of far greater importance to the City.



## CONCLUSIONS

Based on our studies of the information contained in this report, the Authority submits the following as its findings for providing necessary off-street parking for the citizens of San Francisco.

It proposes the establishment of 5,690 new off-street parking spaces at designated locations (see table Page 30) to be financed by a \$15,000,000 Parking Bond Issue which will enable the City and the Parking Authority to select sites, acquire the land, and, if necessary, themselves construct garages or parking facilities thereon.

Then, upon completion of construction, to either:

1. Offer same to private enterprise for an operating lease, preferably under a ticket validation system, which insures that voluntarily posted initial rates are low enough to accomplish the primary purpose of rendering service to the short-term parker; or,
2. To operate the completed facilities themselves.

Since the encroachment of government on private enterprise is to be avoided wherever and whenever possible, the Authority will seek the maximum assistance of private business in the development of the program which may have the net effect of reducing public expenditures therefor.



The Authority suggests that, if everyone interested in the future welfare of San Francisco will cooperate in a sincere and concerted effort to support it, we can get this practical and comprehensive Parking Plan started and in actual operation by 1955.

Respectfully submitted,

Rae T. Smith

Rae T. Smith, Chairman

Walter A. Haas, Jr.

Walter A. Haas, Jr., Member

Randolph Hale

Randolph Hale, Member

Albert H. Jacobs

Albert H. Jacobs, Member

David Thomson

David Thomson, Member

Vining T. Fisher

Vining T. Fisher, General Manager

September 1, 1954



## SUPPLEMENTAL

A report on San Francisco's major parking needs would not be complete without consideration of a Civic Center Underground Garage. This matter has been under study for several years. The present revival of interest in such alternate use for the sub-surface of Civic Center Plaza as a new convention exhibit area requires a re-evaluation of these studies at this time.

It is recognized that the need for greater and permanent parking space in the Civic Center area will increase with the years. The use of Commerce Playfield for the purpose is considered temporary, being for a maximum of ten and a possible minimum of only three and one-half years.

Preliminary plans and cost estimates for an underground garage of 1,000-stall parking capacity beneath the Plaza have been prepared for the City and the Parking Authority by Ramp Buildings Corporation of New York City. These plans include basic design, construction cost estimates, and estimates of revenues and operating costs. The total capital cost is estimated to be \$3,764,000.

A garage of the above size would occupy only one-half of the sub-surface of the Plaza and could thus be built in conjunction with the proposed new convention facilities. The Authority considers its construction to be necessary if and when the convention facilities are so enlarged.



## APPENDIX "A"

The natural inference of the legislative declaration that "serious conditions of congestion of street traffic" are "caused in substantial part by insufficiency of space or accommodations for the parking of motor vehicles off the public streets" (quotations from California Parking Law of 1949) is that street parking shall be eliminated as the powers granted by this legislation are exercised in providing new off-street parking to replace it.

The advantages to traffic movement inherent in prohibition of curb parking are emphasized by the U. S. Chamber of Commerce in its booklet "Curb Parking" (June, 1953) as follows: "Curb parking prohibition, where rigidly enforced, is equal to adding several more lanes for moving traffic."

Professor Donald Berry\* has found that prohibition of curb parking increases street traffic capacity by a rate ten times that accomplished by the familiar prohibition of left-hand turns. The net effect is to increase traffic flow 99% on a 50-foot street without bus stops as illustrated in the table below. (Where parking already is prohibited due to a bus stop, the increase is 55%.)

EFFECT ON PRACTICAL CAPACITY OF PROHIBITING PARKING ON ONE  
APPROACH TO A SIGNALIZED INTERSECTION - 50-FOOT STREET

<u>Type of Change</u>	<u>Capacity in Vehicles per Hour</u>		
	<u>Before Change</u>	<u>After Change</u>	<u>Percent Increase</u>
Parking prohibited (no bus stop)	440	875	99%
Parking prohibited (with bus stop)	485	750	55%
Street width increased by 10 feet	440	535	22%
Green interval lengthened to 36 sec.	440	530	20%
Left turns prohibited	440	485	10%



NOTE: Adapted from Highway Research Board Highway Capacity Manual by the U. S. Chamber of Commerce. Data by Professor Berry\*.

Chicago prohibited all downtown curb parking during business hours over twenty-five years ago.

New York City instituted a partial ban (alternate sides of street on alternate days) some two years ago.

Philadelphia introduced a downtown curb parking ban in December, 1952.

Pittsburgh launched a similar ban in the central business district. Even small cities such as Bristol, Connecticut, and Allentown, Pennsylvania, have followed suit.

In spite of a very exaggerated view to the contrary, curb parkers contribute comparatively little to retail store purchasing. For instance, here are the percentages of downtown curb parkers who were shoppers, as revealed by business district traffic surveys in the year noted,

St. Louis, Mo. (1950)	857,000 (pop.)	under 9%
Minneapolis, Minn. (1950)	522,000	13%
Vancouver, B. C. (1950)	345,000	5%
St. Paul, Minn. (1950)	311,000	15%
Miami, Fla. (1946)	250,000	27%
Norfolk, Va. (1949)	213,000	26%
Tulsa, Okla. (1950)	183,000	21%
Salt Lake City, Utah (1947)	182,000	43%
Wichita, Kan. (1948)	168,000	24%
Wilmington, Del. (1947)	110,000	20%

NOTE: Above data reported by U. S. Chamber of Commerce - 1953.

\*Professor Berry is Assistant Director, Institute of Transportation and Traffic Engineering, University of California, Berkeley, California



SAN FRANCISCO BAY



JUNE, 1954

# SAN FRANCISCO PARKING AUTHORITY

## PARKING PROJECTS IN THE SAN FRANCISCO PARKING PROGRAM

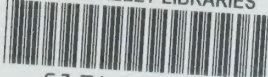
— METROPOLITAN PARKING DISTRICT  
 ■ PARKING PROJECT

--- DISTRICTS OF MAJOR PARKING DEMAND WITHIN THE METROPOLITAN PARKING DISTRICT  
 A TRIANGLE SHOPPING DISTRICT  
 B FINANCIAL  
 C CENTRAL MARKET STREET  
 D LOWER MARKET STREET  
 E NORTH BEACH  
 F NOB HILL  
 G CIVIC CENTER





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